Semantic Infrastructure and Operations Group Wiki

Requirements Elicitation

The caBIG® Vocabulary Knowledge Center **Semantic Infrastructure Main page** contains links to the project plans, schedules, requirements, use cases and other architectural documents. Visit this site to review existing requirements and register any new requirements or comment on existing requirements. A requirements elucidation activity took place through January 2010.

- Semantic Infrastructure Requirements Master List
- Supplemental Requirements Gathering Page
- Requirements Elicitation Update

Updates and Participation

Updates to these pages are made at regular intervals as the details of the infrastructure architecture emerge in more detail.

User Acceptance Testing will be advertised and participation will be requested by the community later in the year.

This is the NCI Wiki home page for the **Semantic Infrastructure and Operations Group**.

The Semantic Infrastructure and Operations Group supports the *vision of the caBIG® infrastructure**, which is to:

- Connect the cancer and broader medical and research community through a shareable, interoperable "network of networks."
- Support the business/transaction/message-based dynamic semantics that will underlie the emerging information infrastructure supporting health care delivery
- Deploy and extend standards and a common syntax and semantics to more easily share information.
- Build and adapt tools for collecting, analyzing, integrating and disseminating information.
- Enable cancer centers and vendors to leverage this infrastructure to provide support of the broader community.

The **Semantic Infrastructure and Operations Group** comprises the semantic aspects of the CORE Program Area, the caBIG® Vocabulary and Common Data Elements Workspace, and certain aspects of the caBIG® Architecture Workspace, and caGrid®.

The **major goal** of the Semantics and Operations Group is to enable semantic interoperability and integration in a virtual network or cloud of interconnected organizations, in order to redefine how research is conducted, care is provided, and patients/participants interact with the biomedical research and care enterprise. The research community is primarily focused on the development of new knowledge and treatments, while the health care community is focused on clinical care and outcomes; both objectives can be advanced by leveraging the semantic infrastructure investment in CBIIT and caBIG® tools and frameworks.

The **scientific goal** of the initiative is to:

- Improve practical utility of semantics to support translational research and personalized medicine.

The **programmatic objectives** of the initiative are to:

- Develop implementation independent architecture model(s) which define the semantics backbone components and behavior.
- Develop reference implementations that the community can review and adopt or adapt as appropriate.
- Utilize/ comply with relevant standards as possible and appropriate.

The activities of the NCI CBIIT Semantic Infrastructure and Operations Group fall into three areas:

- **Content Management** - the processes and procedures that ensure the breadth and quality of the metadata and terminology used to record the semantics of data to meet the needs of the caBIG® community.
- **Semantics Infrastructure** - design and development of software resources and operations including producing reference implementations of platform independent models
- **Semantics Architecture and Management** - defining the platform independent (also called "implementation independent") specification for systems and processes required to meet the semantics needs of the CBIIT/caBIG® enterprise, and assuring that operational requirements for semantics support are met in a timely and reliable way.

Current thinking is that the new infrastructure architecture will include:

- Service oriented architecture
- 11179 Ed3 compliant federated metadata repository
- Model repository
- CTS2 compliant terminology server/services
- Rules repository and related tools to support behavioral semantics and knowledge discovery.